

TWO NEW SPECIES OF *CHAMAEDOREA* (ARECACEAE) FROM
GUATEMALA

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ABSTRACT

Two species of *Chamaedorea* Willd. (Arecaceae) from Guatemala are described as new and compared to related taxa.

KEY WORDS: *Chamaedorea*, Arecaceae, new species, Guatemala.

Recent field work in Guatemala has yielded two interesting and undescribed species of *Chamaedorea*, one from the Pacific slope and the other from the Atlantic slope.

Chamaedorea verapazensis D.R. Hodel & J.J. Castillo Mont, *spec. nov.*
Figure 1. TYPUS: Guatemala. *D.R. Hodel & J.J. Castillo Mont 898A*
(HOLOTYPUS: BH; Isotypus: AGUAT).

Subgeneris *Chamaedoreae* Mart. ex H.A. Wendl. *Chamaedorea concolori* Mart., *C. micranthae* Burret, et *C. aguilarianae* Standl. & Steyerl. affinis sed laminis apicalibus quam ceteris segmentis combinatis latioribus, inflorescentia feminea pauciramosa differt; *C. rojasianae* Standl. & Steyerl. affinis sed habitu grandiore, rachillis masculis numerosis differt.



Figure 1. Plant from which type specimen of *C. verapazensis* was collected, Baja Verapaz, Guatemala. Note long peduncle and pendulous, staminate rachillae.

Stem solitary, procumbent then briefly erect, to 3 m long with adventitious roots along its length, 1 m tall, 8-10 mm diam., green, annulate, internodes 2-5 cm long. Leaves 5-6, erect-spreading, pinnate, bright green; sheath to 15 x 1.3-1.5 cm, tubular, tightly clasping, obliquely open apically, green, longitudinally striate nerved; petiole 5-18 cm long, green and flattened adaxially, green and rounded abaxially with a pale green or yellowish band extending from rachis onto sheath; rachis 12-22 cm long, green and angled adaxially, pale and rounded abaxially; blade in outline to 40 x 28 cm; pinnae 2-5 on each side of the rachis, basal ones lanceolate, to 17 x 4.5 cm, strongly sigmoid, acuminate, 4-6 prominent nerves adaxially, central one slightly more prominent, 1 secondary between each pair of primaries, tertiaries faint, inconspicuous, apical pinnae the largest, to 15-22 x 5-9 cm, sigmoid, acuminate, exterior margin toothed toward the apex, 7-10 prominent primary nerves adaxially, 2 secondaries between each pair of primaries.

Inflorescences interfoliar; peduncles to 55 cm long, erect, 3-4 mm wide at the base and flattened, 1-3 mm diam. at the apex and rounded, pale or light greenish at anthesis, orange in fruit where exposed; bracts 4-5, closely sheathing, acuminate and obliquely open apically, greenish at anthesis, greenish or brown in fruit, longitudinally striate nerved, prophyll to 6 cm long, 2nd bract to 18 cm long, 3rd to 35 cm long, 4th to 30 cm long and extending onto the rachis and concealing rudimentary 5th bract. Staminate inflorescence exceeding the leaves; rachis to 7 cm long, greenish at anthesis; rachillae 7-10, to 17 cm long, slender, 1 mm diam., pendulous, greenish yellow at anthesis. Pistillate inflorescence shorter than or equaling the leaves; rachis to 3 cm long, pale green or greenish yellow at anthesis, orange in fruit; rachillae 2-5, to 10 cm long, rigid, pale green or greenish yellow at anthesis, orange in fruit.

Staminate flowers globose, 2.5-3 mm diam., borne in four rows, moderately dense, 1-2 mm apart, only slightly immersed in superficial elliptic depressions 2-2.5 mm long; calyx ringlike, 1.5-2 x 2.5 mm, shallowly 3 lobed, sepals fleshy, connate, distinctly nerved when dry; corolla with petals connate at the base and apex, and there adnate to the pistillode and opening by lateral apertures, petals broadly ovate, 2.5-3 x 2.5 mm, acute, thick, fleshy, distinctly nerved when dry; stamens 1.5-2 mm long, filaments 1.0 mm long, adnate to base of petals, anthers elongate, 0.75-1 x 0.5 mm, dehiscence latrorse; pistillode broadly columnar, 2.5 x 1 mm, tip flat. Pistillate flowers = globose, 2.5 mm diam., borne spirally in four loose, irregular rows, 2-4 mm apart, immersed in elliptic depressions 2-2.5 mm long; calyx cuplike, 1.5 x 2.5 mm, 3 lobed, lobes rounded, sepals 1.5 x 3 mm fleshy, strongly ribbed when dry, connate along basal half; petals imbricate, briefly connate basally, 2-2.5 x 2.5-3 mm, tips rounded, fleshy, strongly ribbed when dry; staminodes absent; gynoeceium globose, 1.5-2 mm high, 3 angled, style short or lacking, stigma lobes recurved, pointed, brownish. Fruits black, = globose, to 11 x 9 mm diam.

Distribution: Guatemala. Baja Verapaz. Alta Verapaz. Infrequent in

dense, wet montane forest. 1700-2100 m elev.

Specimens Examined: Guatemala. Baja Verapaz: eastern slope of Sierra Chuacas. D.R. Hodel & J.J. Castillo Mont 898A (HOLOTYPE: BH; Isotype: AGUAT); 898B, 885 (BH.AGUAT). Alta Verapaz: northeastern slope of Sierra de las Minas, D.R. Hodel & J.J. Castillo Mont 890, 893 (BH.AGUAT).

Chamaedorea verapazensis is close to *C. concolor*, *C. micrantha*, *C. aguilariana* and *C. rojasiana*. It can be distinguished from the first three by its apical pair of pinnae nearly as large as or larger than the others combined and the few branched pistillate inflorescence. From the latter, it is distinguished by its much larger size and staminate inflorescence with numerous (10) rachillae.

Chamaedorea volcanensis D.R. Hodel & J.J. Castillo Mont, *spec. nov.*

Figure 2. TYPUS: Guatemala. D.R. Hodel & J.J. Castillo Mont 913A (HOLOTYPE: BH; Isotype: AGUAT).

Subgeneris *Chamaedoropsis* Oersted. *Chamaedorea adscendeni* (Dammer) Burret affinis sed foliis segmentis grandioribus nervis prominentibus pluribus, calycibus prominentibus, rachillis masculis pluribus, rachillis femineis floribus immersis non remotis differt; *C. castillo-montii* D.R. Hodel affinis sed foliis pinnatis, inflorescentiis masculis ramosis differt.

Stem solitary, appearing acaulescent but actually short, curved, to 15 cm long, subterranean or buried in the leaf litter, rooting along its length, overall height of plant including leaves to 1 m, nodes very congested. internodes to 5 mm long, above ground stem eventually developing to 30 cm tall, 2-3 cm diam., erect. Leaves spreading, bright green, regularly pinnate to 1.8 m long or flowering when variously and unevenly pinnate or simple and bifid, and then substantially smaller; sheath to 30 cm long, splitting deeply opposite the petiole, obliquely long open, cylindric but clasping completely in a tubular manner only in the basal half, green, thick, longitudinally striate nerved; petiole to 70 cm long, green and flat adaxially and slightly grooved near the base, pale and rounded abaxially with yellowish band extending from rachis onto sheath, green and longitudinally striate nerved laterally; rachis to 75 cm long, green and angled adaxially, pale and rounded abaxially; blade to 80 cm long; pinnae 8-12 on each side of the rachis, thin, long lanceolate, the middle ones the longest, to 35 x 7 cm, slightly sigmoid, falcately acuminate, contracted at the base, 5 prominent primary nerves adaxially, apical pair usually the widest, to 25 x 7.5 cm, 7-8 prominent primary nerves adaxially, 1 secondary between each pair of primaries, basal pinnae to 25 x 4 cm, all pinnae with conspicuous primary and secondary nerves drying a distinct pale yellow abaxially; or, if blade simple and bifid then to 30 x 25 cm, incised apically more than half its



Figure 2. Plant from which type specimen of *C. volcanensis* was collected, Volcán Zunil, Quetzaltenango, Guatemala. Note staminate inflorescence ascending from the base with densely flowered rachillae.

length: rachis to 10 cm long; 7-9 primary nerves on each side of the rachis. 2 secondaries between each pair of primaries.

Inflorescences infrafoliar, erect from the base at or below the leaf litter, long pedunculate: peduncles to 65 cm long, 5-7 mm wide at the base and flattened, 3-5 mm diam. at the apex, green where exposed at anthesis, orange in fruit and nodding slightly when heavily laden with fruits; bracts 6-7, closely sheathing, acute-acuminate, green to brown at anthesis, brownish in fruit, papery, longitudinally striate nerved, prophyll 2.5 cm long, 2nd bract 2.5-3 cm long, 3rd 4-5 cm long, 4th 7-8 cm long, 5th 15 cm long, 6th 20 cm long, 7th 20-25 cm long and extending onto the rachis and concealing a rudimentary 8th bract. Staminate inflorescence with rachis 5 cm long, simple or the basal portion branched with up to 5 rachillae per branch, green at anthesis: rachillae 2-13, 10-15 cm long, 1 mm diam., briefly erect basally then drooping, pale green at anthesis, densely flowered nearly to the base. Pistillate inflorescence usually few branched with up to 5 rachillae, or spicate or furcate, especially when young; rachis to 6 cm long, greenish at anthesis, orange in fruit, slightly longitudinally angled; rachillae or flower bearing portion to 15 cm long, erect, rigid and whitish or very pale green at anthesis, slightly swollen and orange in mature fruit.

Staminate flowers subglobose in bud, 1.5 x 1.5-2 mm, borne spirally in very dense rows but not contiguous, 0.5-1 mm apart, older flowers \pm globose, 4 mm diam., only slightly immersed in superficial elliptic depressions 2.5 mm long; calyx well developed and prominent in bud, 1 x 2 mm, deeply but irregularly 3 lobed, lobes broadly rounded-acute, sepals united in a cupule to 1 mm high, conspicuously brown margined, thin, membranous, free nearly to the base; petals valvate, connate basally, fleshy, deltoid, 1.5 x 2-2.5 mm, spreading apically at anthesis to give corolla vasselike shape, white or cream aging to brown, thin when dry; stamens equaling or exceeding petals, filaments large, terete, flared basally, fleshy, antisepalous ones longer, to 2.5 mm long, antipetalous ones 2.0 mm long, anthers short, 1 x 0.75-1 mm \pm didymous, oval, widely divergent and flattened at the base, thin, attached briefly to filament distally, dehiscence latrorse; pistillode 1-1.5 mm tall, columnar, flared and flattened basally, tip flat, 3 lobed. Pistillate flowers borne spirally and densely in five rows but not contiguous, 0.5-1 mm apart, globose, 2 mm diam., whitish or cream, only slightly immersed in shallow elliptic depressions 2.5 mm long; calyx well developed and prominent in bud, cuplike with triangular central opening, 0.75-1 x 2-2.5 mm, 3 lobed, lobes broadly rounded, sepals connate basally, thin, membranous, brown margined; corolla with petals tightly imbricate nearly to apex and there briefly open, petals connate basally only briefly, 2 x 1.5-2 mm, straight or rounded apically; staminodes absent; gynoeceum ovoid, 1.5 x 1.5 mm, style lacking, stigma lobes short, pointed, recurved. Fruits black, oblong or ovoid, 12 x 8 mm, narrowed at apical end.

Distribution: Guatemala. San Marcos. Quetzaltenango. Suchitepéquez.

Dense, wet, montane forest on the Pacific slope, 1200-2000 m elev.

Specimens Examined: Guatemala. Quetzaltenango: southwestern slope of Volcán Zunil. *D.R. Hodel & J.J. Castillo Mont 913A* (HOLOTYPE: BH; Isotype: AGUAT); *913B* (BH.AGUAT); southeastern slope of Volcán Santa María. *D.R. Hodel & J.J. Castillo Mont 907A; 907B* (BH.AGUAT). Suchitepéquez: southwestern slope of Volcán Zunil, *J.A. Steyermark 35247* (F).

Chamaedorea volcanensis appears restricted to the vast and diverse forests of the wet, Pacific slopes of Volcán Tajumulco, Volcán Santa María, Volcán Zunil and Volcán Santo Tomás in western Guatemala, hence the specific epithet.

Although resembling *Chamaedorea adscendens* in its densely flowered staminate rachillae, *C. volcanensis* is sufficiently distinct in its larger pinnae with several prominent nerves, flowers with a prominent and well developed calyx, staminate inflorescence with more rachillae, and the pistillate rachillae with immersed, densely crowded flowers. Flowers of *C. volcanensis* are similar to those of *C. castillo-montii* from eastern Guatemala. However, the latter taxon has spicate staminate inflorescences and leaves usually simple and bifid (or, if pinnate, then the pinnae linear with a prominent midrib and less conspicuous secondary nerves).

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